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# **Impact of COVID-19 in India: An Analysis of the Adversely Affected States and Districts**

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# Impact of COVID-19 in India: An Analysis of the Adversely Affected States and Districts

Vijay Kumar<sup>1</sup>

## Abstract

The progressive spread of the COVID-19 pandemic has created havoc with a high mortality rate worldwide. Countries took measures like the lockdown/shutdown of the economies, including India, which in turn badly hit the lower-income groups and daily wage earners especially the internal migrants. This study focuses specifically on the impact of different sectors in four states and six districts with a large number of COVID-19 cases in India. To emerge from this crisis, the paper would be analysing the situation and providing policy recommendations as well.

## 1. Overview

The novel virus COVID-19 pandemic forced the shut down across the world while also adversely affecting the people and their livelihood. Currently, the virus has spread almost 213 counties and territories, and more than 7 million people were infected and 0.4 million people were killed worldwide<sup>2</sup>. The COVID-19 has affected the world from two sides; first, the increasing mortality rate and another is economic slowdown due to lockdown. Europe, North America, and Asia are the worst affected continents and the world's most affected nations are United States (US), Brazil, Russia, Spain, United Kingdom (UK), India, Italy, and so on. India reached the sixth position in terms of the most COVID-19 cases on 5<sup>th</sup> June, 2020 surpassing Italy. However, India is doing much better after Russia in terms of the number of total death in highly infected countries<sup>3</sup>. The first case in India was reported on January 30, 2020 in Kerala, all three students were identified by Kerala's health ministry, as they had returned from Wuhan, China<sup>4</sup>. Now, almost all states including union territories are infected by the COVID-19 in India. As on 4<sup>th</sup> June, 2020, the six worst infected districts reported in India were Mumbai (44,931), Delhi-Unknown (24,216), Chennai (18,693), Ahmedabad (13,354), Thane (11,420), and Pune (8,825)<sup>5</sup> from four most infected states namely Maharashtra (77,793), Tamil Nadu (27,256), Delhi (25,004), and Gujarat (18,609)<sup>6</sup>. It's alarming that the spread is fastest in these districts.

The COVID-19 pandemic has created several impacts in India: economic shock, loss human's lives, and the livelihood of several vulnerable households', especially migrant works. According to Dr. C.S. Bahinipati "Economic shocks, of course, are not uncommon and governments around the world have developed an arsenal of weapons to tackle them but

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<sup>2</sup> Worldometer, <https://www.worldometers.info/coronavirus/>, (Accessed on June 08, 2020)

<sup>3</sup> Ibid

<sup>4</sup> <https://weather.com/en-IN/india/news/news/2020-02-14-kerala-defeats-coronavirus-indias-three-covid-19-patients-successfully>, (Accessed on June 06, 2020)

<sup>5</sup> India COVID-19 Tracker, <https://api.covid19india.org/projects/analysis.html>

<sup>6</sup> India COVID-19 Tracker, <https://www.covid19india.org/>

what is different about the Covid-19 induced crisis today is its unprecedented scope and global scale”<sup>7</sup>. Both agriculture and manufacturing sector in India has been badly affected by the pandemic. Farmers are unable to reach the procurement houses to sell their goods; apart from it, manufacturing firms’ are closed due to complete lockdown which in turn disturbs the livelihood of every household from lower to upper strata of the society. There seems to be a drastic shock in the supply chain system worldwide, from the point a farmer grows a grain to the government procurement house to the manufacturers’ to your doorsteps, everything gets disrupted. Interestingly, the service sector also experienced a distress due to the low work efficiency and productivity, even after getting a provision of work from home. On the other hand, due to unexpected shock and a complete freeze of the supply chain and it has moved to a period of recession. To understand the current scenario of COVID-19 and its impact on different sectors in India, a few selected districts and state-level analysis has been done in the next section.

## **2. Current Scenario**

### **2.1 Impact of COVID-19 on intensely affected districts**

For the comparative analysis of the districts, the study includes data from six most infected districts in India from May 19, 2020 to June 4, 2020 and unable to consider data before May 19, 2020 due to unavailability of data. Figure 1 shows the cumulative number of COVID-19 cases in Ahmedabad, Mumbai, Pune, Chennai, Delhi (unknown), and Thane. These districts are major ones in terms of populous, known as a megalopolis. It defines a large city with a high population or an urban area with large cities<sup>8</sup>. The comparative analysis of these six districts shows the number of positive cases has been increasing since late May 2020. The districts consisting of Mumbai, Delhi, and Chennai has been witnessing the worse situation in terms of positive cases, which is approximately over 45000, 24000, 18000 COVID-19 cases were reported respectively in these megalopolis as on June 04. However, Ahmedabad is witnessing a steep increase during this period with over 13000 positive cases. The growth in the number of COVID-19 cases from May 19 to June 04 in Ahmedabad was 1.49 times, Mumbai (2.11), Pune (2.17), Chennai (2.43), Delhi (2.48), and Thane (2.59)<sup>9</sup>. Figure 2 depicts the vulnerability level of the districts. It shows that the recovery per death is increasing in all five districts except Delhi. The recovery per death in Chennai (33 to 57) is highest among the districts, while the Mumbai (5-12), Ahmedabad (5 to 10), and Pune (8 to 13) have a steady increase in recovery per death. Moreover, Thane (15 to 16) has almost constant recovery per death throughout the period and Delhi (29 to 15) is the only district who’s experiencing a decline.<sup>10</sup> Among all six districts during this period of analysis, Delhi is the most vulnerable and Chennai is the least vulnerable district in terms of recovery per death other thing being constant (Figure 2).

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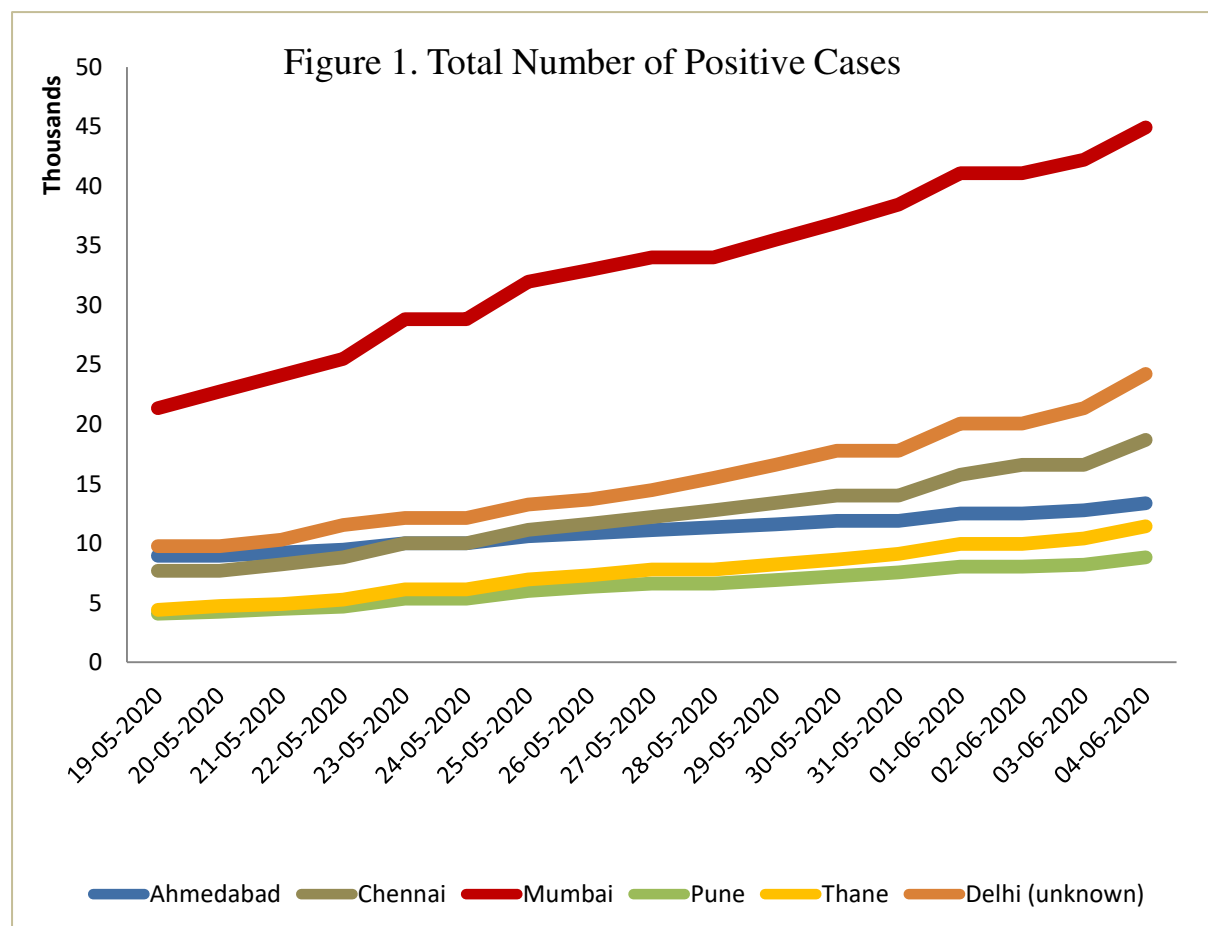
<sup>7</sup> Bahinipati, C.S et al. (2020) COVID-19: Policy Interventions and Socio-economic Impact in Andhra Pradesh, India. Munich Personal RePEc Archive, available at: <https://mpra.ub.uni-muenchen.de/100501/>. (Accessed on June 08, 2020)

<sup>8</sup> <https://www.merriam-webster.com/dictionary/megalopolis>, (Accessed on June 08, 2020)

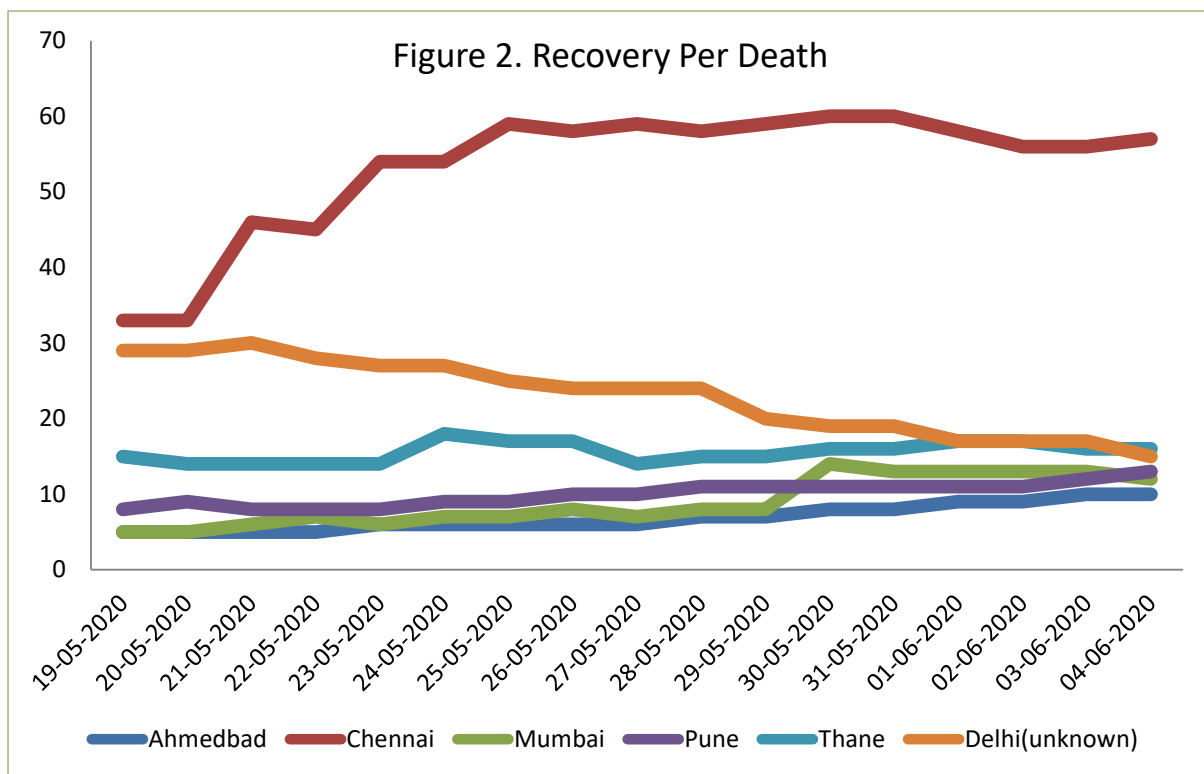
<sup>9</sup> India COVID-19 Tracker, <https://api.covid19india.org/projects/analysis.html>

<sup>10</sup> Ibid

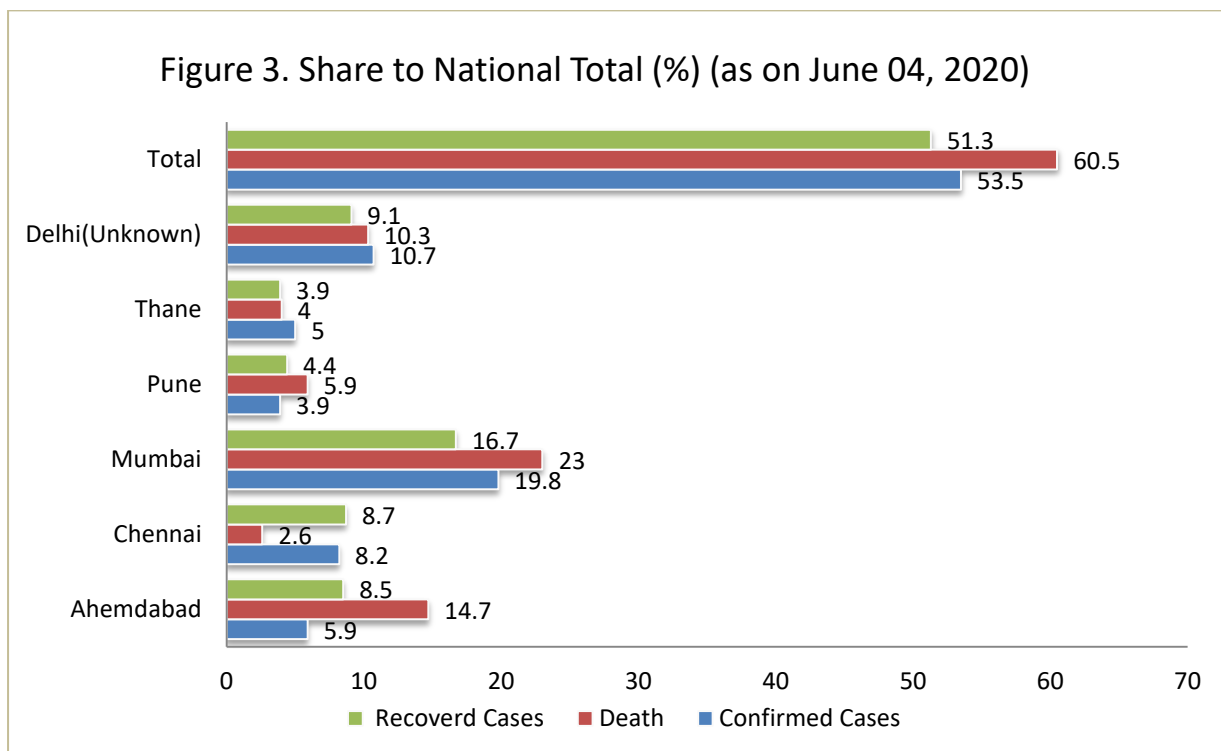
The importance of recovery per death is necessary from the analysis point of view to understand the current situation. As long as the recovery per death is high, we could assume that the situation is still under control. However, these districts are unable to control the spread due to inefficient contact tracing and less number of testing. Therefore, it is important to focus on recovery per death and it should improve continuously. These districts are on the top priority of state and centre government to slow down the spread. Figure 3 shows that the share of confirmed positive cases, recovered cases, and total death to national total in percentage. The percentage of confirmed and recovered cases of these six districts contributed more than 50% to the national total and around 60% in death till June 04, 2020. The districts like Mumbai, Ahmedabad, and Delhi are contributing the most to the national total in respect of total deaths; while Chennai, Thane, and Pune have lesser numbers. However, Mumbai, Delhi, and Chennai are showing improvements with regard to recovery as the number are increasing on this front. All these six districts come from four majorly infected states namely Maharashtra, Delhi, Tamil Nadu, and Gujarat. Out of six districts, three are from Maharashtra only. Now, we try to understand the current scenario of these four states in the next section.



Source: Authors' figure (data collected from covid19india)



Source: Authors' figure (data collected from covid19india.org)



Source: Authors' figure (data collected from covid19india.org)

## 2.2. Impact of COVID-19 on intensely affected states

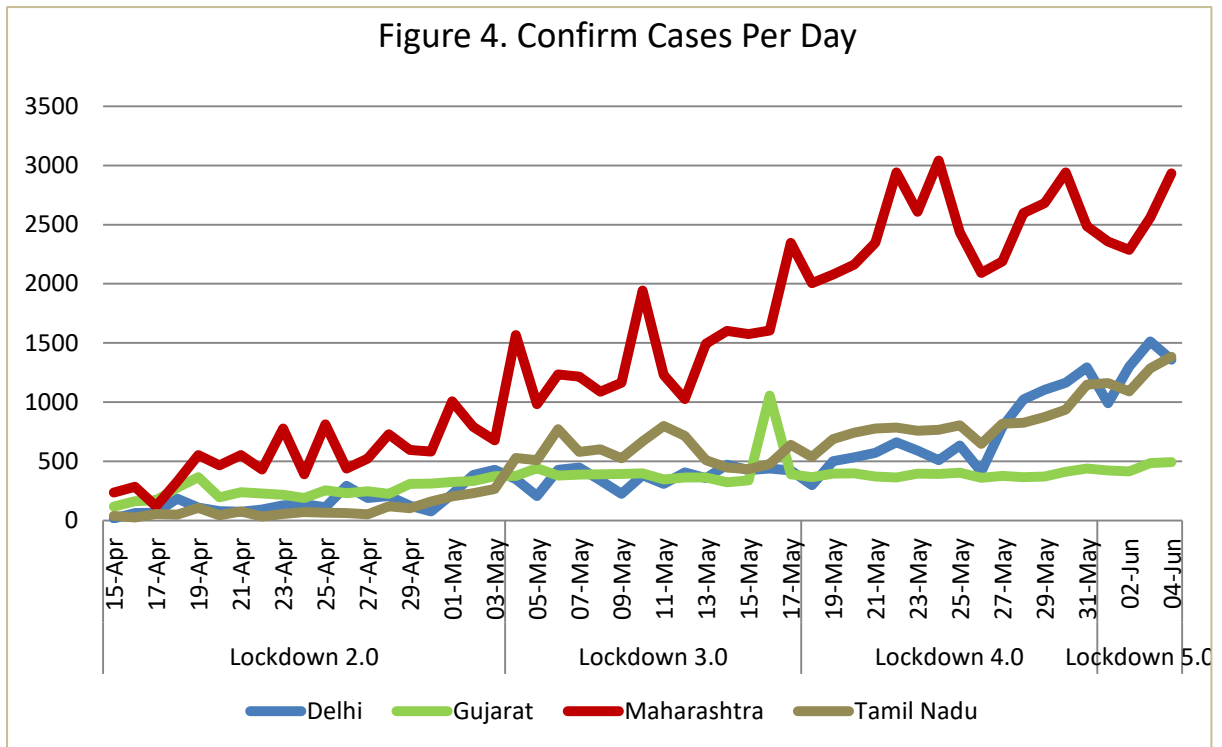
This section analyses the current situation among the four highly infected states of India. As we know that the number of cases has been increasing every day in India. Figure 4 shows the pattern of the number of COVID-19 cases per day of four most infected states in India during

the lockdown 2.0 to 5.0 (till June 04, 2020). The number of cases are booming with an increasing rate in Maharashtra and have experienced a spike since the mid of May 2020. On the other hand, Delhi and Tamil Nadu are experiencing approximately a similar rate in the hike of the number of positive cases, but have witnessed a spike at different times. Delhi has experienced a spike in cases since the end of May 2020. Whereas, it was since the starting of May 2020 and rose continuously. In Gujarat, the number of positive cases has increased steadily except on May 16, as more than 1000 cases were reported. The spike in these states has been noticed after easing the lockdown norms in the starting of the lockdown 4.0 with an exception in Gujarat. According to a research firm Nomura, India is one of the 15 high-risk countries where relaxing in the lockdown norms lead to a spike in infection<sup>11</sup>. Figure 5 shows that the recovery rate of India has improved to 1.48 times during this period. Moreover, the recovery rate in Maharashtra, Tamil Nadu, and Gujarat has bettered by more than 2.1 times while Delhi has only achieved to 1.2 times. The recovery rate in Delhi has increased until May 23-24 (48.5 per cent) but afterwards, it started decreasing due to a sudden increase in the number of COVID-19 cases. In the case of Maharashtra, the recovery rate has suddenly increased on 29<sup>th</sup> May, when more than 8000 patients were recovered in a single day. The current recovery rate in the country is at 47.9 per cent, while Gujarat at 68.1 per cent followed by Tamil Nadu (54.7 per cent), Maharashtra (43.3 per cent), and Delhi (39.6 per cent).

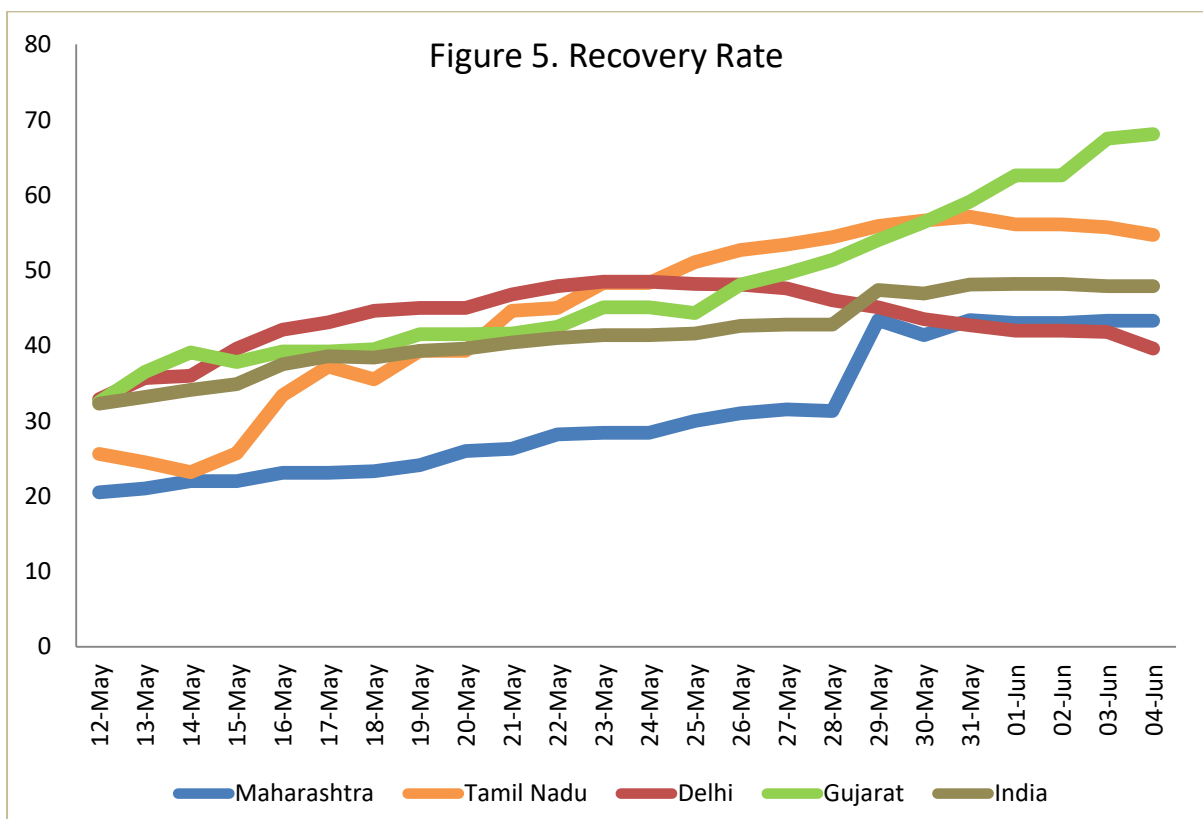
Interestingly, Figure 6 represents the doubling rate, the recovery per death and percentage of positive COVID-19 cases over the total test. The doubling rate of India is currently placed in 9.3 days. Whereas, the doubling rate is more than 7 days in three states except in Tamil Nadu (6.4 days). The recovery per death in the country is 16. Whereas, Gujarat (39.0) has the highest among these states and Maharashtra (8.1) has the lowest. Delhi (21.3) and Maharashtra (22.3) represents a higher percentage of confirmed COVID-19 cases over total test while the Gujarat and Tamil Nadu has fewer cases (approx. 10 per cent) comparatively. As of now, the confirmed COVID-19 cases among the total test are 7.3 per cent in India. Interestingly, Figure 7 represents the number of test per million population, and Delhi (13,709) has tested the highest per million population followed by Tamil Nadu (7326), while India has only 3505. It seems the lockdown is not much effective especially after relaxing the norms in 4<sup>th</sup> and 5<sup>th</sup> lockdown. It indicates that the national, as well as state governments, need to take some solid policy measures to flatten the COVID-19 curve. As we are witnessing an increase in COVID-19 cases and countries like France, Italy, Spain, United Kingdom, Germany, etc. with the best health care system in terms of the population had to struggle and India will have to try hard to contain it. India needs to improve its health care system immediately by injecting more funds in the medical sector.

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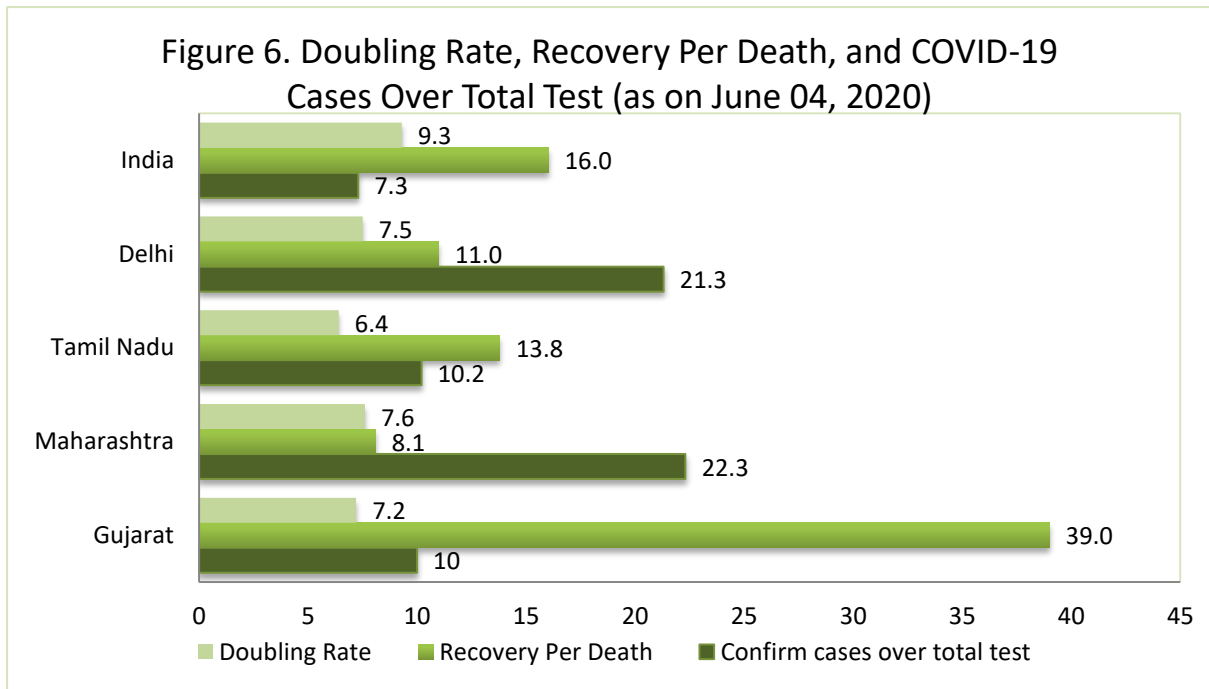
<sup>11</sup> <https://www.hindustantimes.com/india-news/india-unlocking-is-among-15-high-risk-nations-study/story-gv9MXw9Sv5ccLlVD9pe1VK.html>, (Accessed on June 11, 2020).



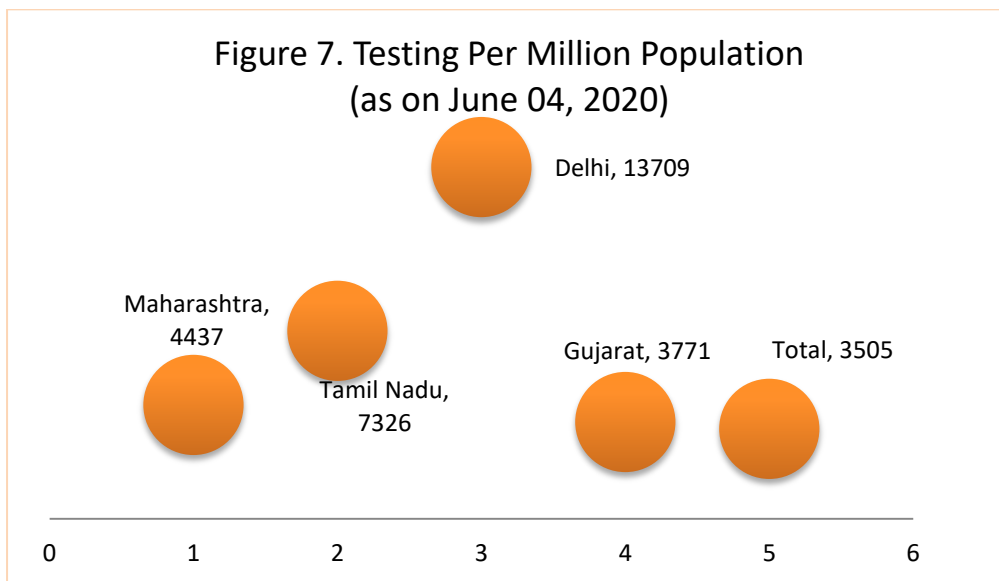
Source: Authors' figure (data collected from covid19india.org)



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### 3. Impact on Different Sectors

India being a three-sector economy- namely agriculture, manufacturing, and service sector, the nationwide lockdown affected the entire sector drastically. The agricultural sector experienced heavy disruptions due to the freezing up of the supply chain and the complete lockdown just made it worse before the harvesting season. Indian farmers' are worried about the government procurement system and ability to sell their crops at the minimum support price. In the initial days of lockdown 1.0, there seem to be a lot of news from the media on the fact that the farmers' are unable to reach procurement house and many other grave issues concerning the unavailability of harvesting machines, shortage of labour, falling price etc.



Even though the states make an effort to allow farmers to be supported by restoring agriculture and allied activities in phases and assisting them to increase their supplies to markets, the enforced presence of a district-wise lockdown and containment zone will not see any rise in effective demand for cash-crops (like fruits, vegetables, cotton, sugarcane) which would result in very low or negative farm income/revenue. Apparently, the most vulnerable section of the society during this lockdown was the migrant workers, as around 1.1 million migrant workers from Maharashtra and 2.05 million from Gujarat have returned to their home<sup>12</sup>. Other sectors including horticulture, poultry, and dairy farmers' also got largely distressed with the lockdown. However, there are two reasons why India would experience a grave effect due to the lockdown. First, the economy was already moving slowly before the lockdown, with increasing unemployment, lower incomes, rural distress, and extensive inequality to be precise. Second, the large informal sector in India is the most vulnerable sector at this point. Out of the national total of 465 million workers, around 91% (422 million) were informal workers in 2017-18<sup>13</sup>. Due to the novel pandemic the coronavirus, more than 91 million small traders and labourers lost their jobs and while including the entrepreneurs and salaried workers, the number goes over 119 million just only in April 2020 in the country. In contrary, the agriculture sector has witnessed an increment of 5 per cent in employment from farmers<sup>14</sup>. After lockdown, the demand for Fast-Moving Consumer Goods (FMCG) products like groceries and hygiene related products has increased. Hotel and restaurant operator has lost 30-35% of their business. However, sports and entertainment business also got affected due to complete shutdown and one of the biggest cricketing events, the Indian Premier League (IPL) lost approximately US\$500 million<sup>15</sup>. Similarly, the e-commerce companies were unable to deliver their existing order or take new orders, even when the demand for home delivery was too high. Surprisingly, the digital transaction has increased and the Indian economy is witnessing a progressive transition from cash to cashless economy<sup>16</sup>. In the pharmaceuticals industry, after announcing the complete lockdown, the domestic production of medicines has decreased because India used to import 85% of active pharmaceutical ingredient (APIs) from China, according to Trade Production Council of India<sup>17</sup>. However, currently, India is the mass producer and exporter of generic drugs

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<sup>12</sup> <https://indianexpress.com/article/explained/coronavirus-how-many-migrant-workers-displaced-a-range-of-estimates-6447840/>, (Accessed on June 09, 2020)

<sup>13</sup> Dev, S. M., (2020). Addressing COVID-19 impacts on agriculture, food security, and livelihoods in India. International Food Policy Research Institute, available at: <https://www.ifpri.org/blog/addressing-covid-19-impacts-agriculture-food-security-and-livelihoods-india>, (Accessed on June 09, 2020)

<sup>14</sup> <https://www.statista.com/statistics/1117138/coronavirus-impact-on-employment-by-type/>, (Accessed on June 12, 2020)

<sup>15</sup> Kapur, R (2020). Social and Economic Impact of COVID-19 on India and Recovery Potential. INDIA BRIEFING from Dezan Shira & Associates, available at: <https://www.india-briefing.com/news/social-economic-impact-covid-19-india-recovery-potential-20202.html/>, (Accessed on June 10, 2020)

<sup>16</sup> Vailiathan, V.K., (2020). Tackling Fiscal Challenges and Emerge from 'Covidonomy Crisis'. CLAWS Focus, available on: <https://www.claws.in/tackling-fiscal-challenges-and-emerge-from-covidonomy-crisis/>, (Accessed on June 13, 2020)

<sup>17</sup> Kapur, R (2020). Social and Economic Impact of COVID-19 on India and Recovery Potential. INDIA BRIEFING from Dezan Shira & Associates, available at: <https://www.india-briefing.com/news/social-economic-impact-covid-19-india-recovery-potential-20202.html/>, (Accessed on June 10, 2020)

globally. India exports more than 50 per cent of global demand for several vaccines, 40 per cent of the US demand for generic medicines and 25 per cent of the UK for all medicines<sup>18</sup>.

#### **4. Concluding Remarks**

The COVID-19 outbreak has somewhat shattered the economy and the high mortality rate seems to be a worry. Moreover, it seems like India might tackle the situation and emerges from the crisis like that of the Financial Crisis of 2008-09<sup>19</sup>. With the vaccine yet to be developed, it is imperative that the government should focus on recovery per death. From the above comparative analysis, it is seen that the number of COVID-19 cases is increasing progressively every next day in all four states and especially in the districts/cities of Mumbai, Delhi (unknown), and Chennai. However, recovery per death in Maharashtra is lower while the recovery rate in Delhi is declining every day- which is a very serious concern. However, Delhi is doing an exceptional work with a high number of testing, followed by the Tamil Nadu as well.

The central government, as well as state governments, should intervene immediately on the following issues:

- Immediate focus on improving health care facilities nationwide, even in the remote areas to handle the spread of the pandemic.
- Improve the number of testing across the state and start doing random testing especially in most infected districts/cities.
- The informal sector and migrant workers are the most affected people; therefore, the government should ensure the jobs through MNREGA or minimum support wages until it's over to reduce hunger.
- Smoothening of supply chain system of essential goods to feed people.
- Focus on food security, PDS, crop procurement, etc.

The increasing number of COVID-19 cases across the states making people worried. To ease this situation, the state government could play a pro-active role in ensuring the best possible medical facilities to the people. In short, the government must focus on medical facilities such as the number of COVID-19 specialist hospitals, number of beds, ventilators, PPE kits, free ambulance service, etc. which seems to be an immediate concern to be met. Also, the information about the name and location of the hospital that is treating the COVID-19 patients and number of vacating beds in each hospital has to be provided in the public domain. Thus, the pandemic has shown the importance of the health sector in the economy and perhaps this might give a new rise in the digital economy as well.

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<sup>18</sup> <https://www.ibef.org/industry/pharmaceutical-india.aspx>, (Accessed on June 13, 2020)

<sup>19</sup> Vailiathan, V.K., (2020). Tackling Fiscal Challenges and Emerge from 'Covidonomy Crisis'. CLAWS Focus, available on: <https://www.claws.in/tackling-fiscal-challenges-and-emerge-from-covidonomy-crisis/>, (Accessed on June 13, 2020)